USING LCTA CREWS FOR SPOT MONITORING AND ASSESSING IMPACTS ON CULTURAL & ENDANGERED SPECIES SITES

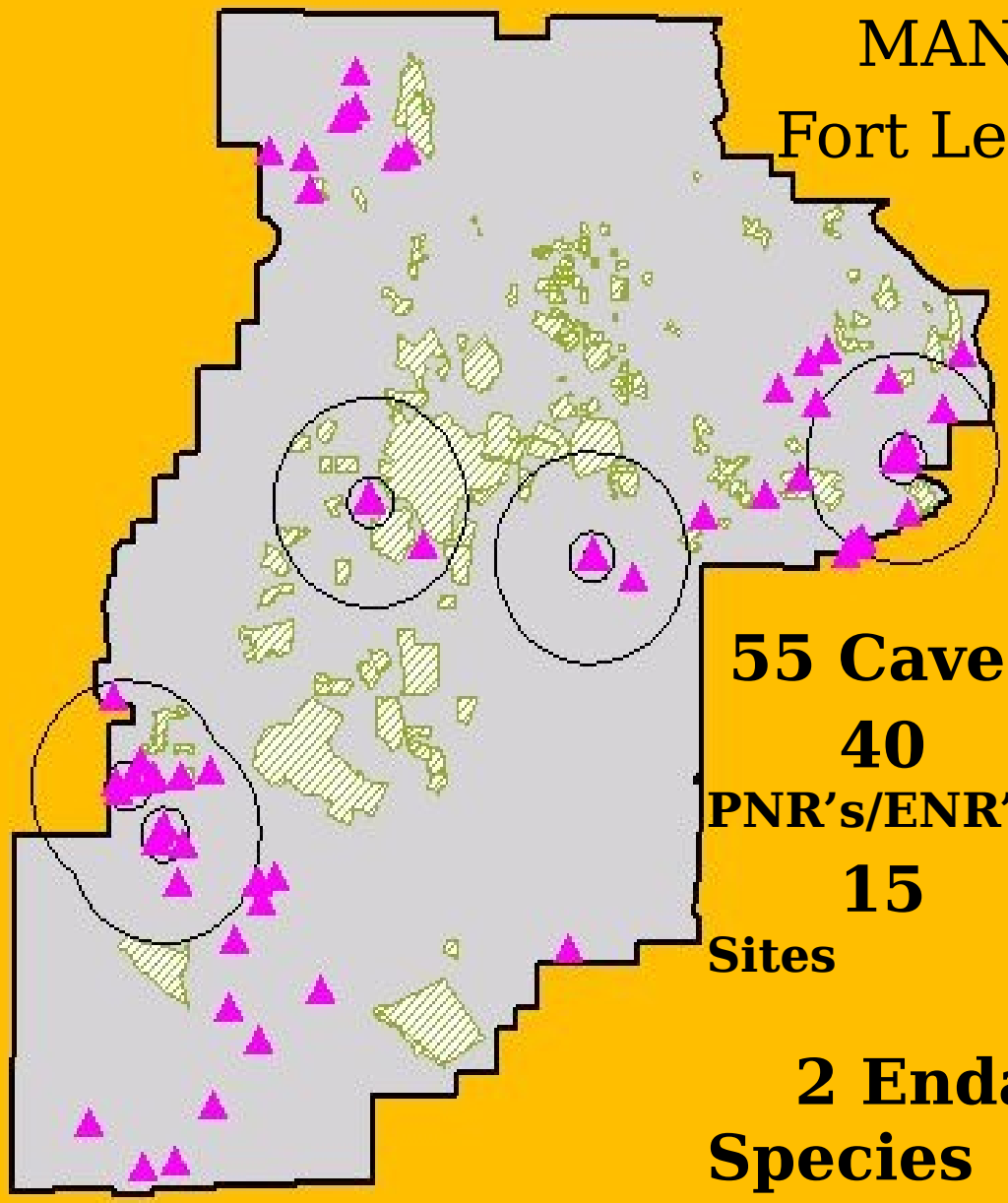
***BACKGROUND: In 1996 Fort Leonard Wood was tasked in a Biological Opinion (BO) by USFWS AND MDC to monitor and determine the number and types of entries in several caves with Federally/State Endangered Species. In addition, a negative ECAS finding based on continued ARPA/NAGPRA violations encouraged the Cultural Resource Program to implement a monitoring program for sites eligible for the**

•PROBLEM: ITAM Program/DPW Natural Resource Branch was tasked to integrate a Biological and Cultural Resource Monitoring Plan. Cave sites have a history of continual entry and disturbance since the installation was created in 1940. Bat caves are sensitive to specific seasonal disturbances due to both hibernation periods and maternity activities. Archeological sites have been frequently looted and occur during all seasons.

THE ISSUES:

WHO RESPONSIBLE (Military or Non-Military)
WHY ARE CAVES BEING ENTERED

MANSCEN &
Fort Leonard Wood



55 Caves (Known)

40
PNR's/ENR's

15 **NAGPRA**
Sites

2 Endangered Species

5 Caves

SOLUTIONS &

ESTABLISH FLW REGULATIONS

ESTABLISH EDUCATIONAL PROGRAM. To Disseminate Information.

ESTABLISH SITE MONITORING PROTOCOLS WHO WHY

Establish Regulations & Environmental Education Progra

***FLW Reg. 210-14 3-17 (e)**

"All caves and rock shelters are off limits to military activities".

* **Leaders Handbook** ***Reinforce FLW 210-14 3-17 (e)***
* **Commanders & Leaders Field Card** ***Reinforce FLW 210-14 3-17***

Include Cave Section in Hunting & Fishing Safety Video

Post Signs at All Sites with Guidelines and Restrictions

INITIAL SITE MONITORING PROTOCOLS TO ANSWER THE ISS

Standard LCTA Medium-Sized Mammal Track Station (Modified)

Bi-monthly Visitation of Sites by Crew & Record Findings.

Analyze Data and Modify Site Visitation Schedule Based on Data

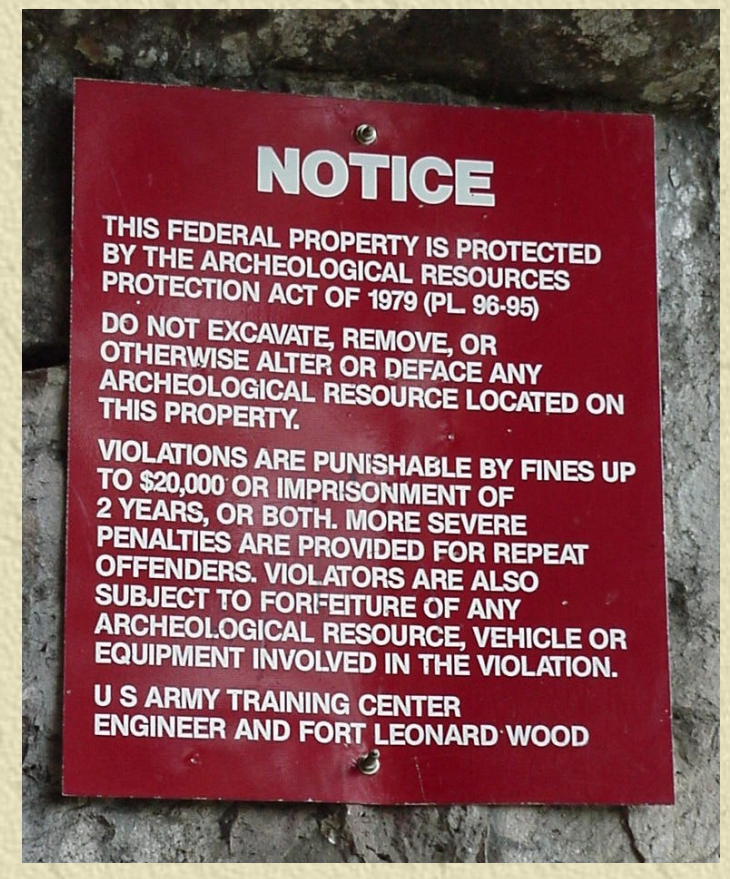
Initial Determination, if possible, of Who (Military/Non-Military)

INFORMATION SIGNS POSTED AT CAVES

Bat Hibernation Cave

ATTENTION
THIS CAVE IS CLOSED TO PUBLIC USE
AUGUST 1 - MAY 31
Endangered bats hibernate in this cave. Bats must survive the winter on stored fat. When disturbed, they use up these fat reserves and may not survive until spring when insects are available. Please do not disturb them.
Entering this cave during this time is in violation of the Endangered Species Act, punishable by fines up to $50,000 for each violation.
Contact DPW Natural Resources Branch for information 596-0871
CONSERVATION DEPARTMENT
MISSOURI
MISSOURI
U.S. DEPARTMENT OF THE INTERIOR

Cultural Resources Cave


NOTICE
THIS FEDERAL PROPERTY IS PROTECTED BY THE ARCHEOLOGICAL RESOURCES PROTECTION ACT OF 1979 (PL 96-95)
DO NOT EXCAVATE, REMOVE, OR OTHERWISE ALTER OR DEFACE ANY ARCHEOLOGICAL RESOURCE LOCATED ON THIS PROPERTY.
VIOLATIONS ARE PUNISHABLE BY FINES UP TO $20,000 OR IMPRISONMENT OF 2 YEARS, OR BOTH. MORE SEVERE PENALTIES ARE PROVIDED FOR REPEAT OFFENDERS. VIOLATORS ARE ALSO SUBJECT TO FORFEITURE OF ANY ARCHEOLOGICAL RESOURCE, VEHICLE OR EQUIPMENT INVOLVED IN THE VIOLATION.
U S ARMY TRAINING CENTER
ENGINEER AND FORT LEONARD WOOD

MONITORING SITE PROTOCOLS

DATA COLLECTED ON SITE VISITS

Date & Time of Visit	**When**
Entry Since Last Visit	**Frequency**
Sign of Disturbance	**Type**
Area Open or Closed	**Status (Public Access/Military Training)**

CULTURAL RESOURCES

Tracks: *Type*	**Shoe Type**
Digging: *Casual/Organized*	**Good Ol'Boy/Professional Pot Hunter**

BIOLOGICAL RESOURCES

Tracks: *Type*		**Shoe Type**
Entry:	***Minor (Twilight Area)***	**Good Ol'Boy/Depth of Entry into Cave**
	Major (Interior)	**Deliberate/Depth of Entry**

CAVE MONITORING

Cave Entrances Were Raked and Checked Bi-monthly

Type of Entry Recorded

Severity of Entry Recorded

Biological Disturbance

Gray Bat (dead juvenile)

Disturbed Off Maternity Roost

Cultural Resource Disturbance

Tools Left by Looters at NAGPRA Site (pottery & diagnostic

Initial Year Data LCTA Collection

Month of Violation	# Entries		Type of Entry		Type	
	Early	Late	Major	Minor	Biological	Cultural
Jan	3	0	2	1	1	2
Feb	1	2			3	3
Mar	1	1		1	1	1
1						
Apr	5	4	1	8	8	1
May	3	0			3	3
Jun	1	0			1	1
Jul	0	0				
Aug	0	0				
Sept	0	1		1	1	
Oct	1	3		4	4	
Nov	2	5		1	6	7
Dec	4	3		3	3	4

Data Summary/Results LCTA

Total Entries for the Year 43

Type of Entry 8 **Major** 35 **Minor**

Type of Violation 37 **Biological** 6 **Cultural Resources**

DATA ANALYSIS & INTEPRETATION

Top Months With Most Total Entries
April/November/December

Top Months with Major Entries
December/January

Most Entries Occur During Area Open Status
(Public Access)

Most Minor Entries Coincide with Hunting Seasons
(Turkey/Deer)

Most Major Entries Coincide with Exodus (Installation Wide Open)

Most Entry Violations are Minor and Biological (Casual, Twilight Area)

Most Cultural Resource Entries Are Major
(Organized)

Current & Future Cave Management On Fort Leonard

Cave Gates at NAGPRA Sites Cave Data-loggers **(light/motion)** Harden Cave Surfaces **(Recreational)**

Cave Management Plan Continue Monitoring **(DPW)** Work With USFWS/MDC

Lead DoD in Natural/Cultural Resource Site Management